Study on South-West Monsoon

781. SHRI NAND KUMAR SAI: Will the Minister of EARTH SCIENCES be pleased to state:

(a) whether Indian Institute of Tropical Meteorology has made any study in the recent past on the South-West Monsoon in India;

(b) if so, the details thereof;

(c) whether the said Institute has issued any remedial measures to deal with the situation;

(d) if so, the details thereof; and

(e) the details of the measures taken in this regard?

THE MINISTER OF STATE OF THE MINISTRY OF EARTH SCIENCES (SHRI PRITHVIRAJ CHAVAN): (a) Yes, Sir.

(b) The research studies carried out at the Indian Institute of Tropical Meteorology (IITM), Pune indicate that the south-west monsoon rainfall over the country has decreased by nearly 4.7% during the period 1965-2006 as compared to the earlier period (1931-1964). Further, a significant increasing trend in the frequency and magnitude of high rainfall events (greater than l0cm/day) and a significant decreasing trend in the frequency of moderate events (1-5cm/day) are noticed.

(c) to (e) Continuous R&D efforts are underway to comprehensively understand the causes for the aforementioned changes in the southwest monsoon rainfall and to improve the rainfall predictions in all time scales.

Change of sea water into potable water

†782. DR. PRABHA THAKUR: Will the Minister of EARTH SCIENCES be pleased to state:

(a) whether the sea water can be changed into potable water by desalination;

(b) if so, the cost of the process of changing one litre sea water into potable water and the details thereof;

(c) whether sea water is being changed into potable water at any place in India;

(d) if so, the name of that place;

(e) if not, the reasons therefor; and

(f) the details thereof?

THE MINISTER OF STATE OF THE MINISTRY OF EARTH SCIENCES (SHRI PRITHVIRAJ CHAVAN): (a) Yes, Sir. The National Institute of Ocean Technology (NIOT) an autonomous body of the Ministry of Earth Sciences has indigenously designed developed and demonstrated

†Original notice of the question was received in Hindi.

desalination technology for conversion of sea water into potable water based on Low Temperature Thermal Desalination System (LTTD). The LTTD is a process under which the warm surface sea water is flash evaporated at low pressure and the vapour is condensed with cold deep sea water. This technology is efficient and suitable for island territories of India.

(b) The initial estimated cost of production of Kavaratti Plant was 10 paise per litre depending on the charges of power/electricity. The estimated cost of production of demonstration plant is inclusive of capital and other fixed costs. The operational cost of production is about 6-7 paise per liter.

(c) Yes, Sir.

(d) Currently, two plants are in operation. The first LTTD plant with a capacity of 1 lakh liter per day production of fresh water was developed and commissioned in May 2005, at Kavaratti, Lakshadweep Island. Since then the plant has been effectively working and catering significantly to the needs of the local population. The plant has so far produced over 155 million liters of fresh water. The Lakshadweep Islands have the advantage of ocean depth (~500 m) available within few hundred meters from the coast and hence, island-based plants are possible. NIOT is in the process of setting of 3 more plants in the islands of Lakshadweep of 1-lakh liter per day capacity, one each in Agatti, Androth and Minicoy. The target for completion of one of the plants at Agatti is March, 2010 and for the other two plants is March, 2011. Another LTTD Plant of 1-lakh litre per day capacity was also established at Northern Chennai Thermal Power Station, Chennai in March, 2009, which uses waste heat discharge from the power plant. A scheme is also being formulated for large scale desalination plants at the coastal power plants and the remaining 3 more islands of Lakshadweep islands which envisages Public-Private Partnership.

(e) and (f) Does not arise.

Hydroelectric project in POK

783. SHRI AMAR SINGH: Will the Minister of EXTERNAL AFFAIRS be pleased to state:

(a) whether Government is aware that Pakistan has decided to construct the Bunji hydro-electric project in Pakistan occupied Kashmir with the help of China;

(b) if so, the details thereof;

(c) whether it is also a fact that Pakistan has also promulgated the Gilgit Baltistan Empowerment and Self Governance Order, 2009 as part of a reforms package for northern area; and

(d) if so, Government's reaction in regard thereto?

THE MINISTER OF STATE IN THE MINISTRY OF EXTERNAL AFFAIRS (SHRI SHASHI THAROOR): (a) Yes.